

Maths Champions Case Study

Champion: Laura Cadmore & Lily Taylor

Setting: Jubilee Gems

INTENT
Introduction <i>A little bit about your setting, why you joined the programme and what you wanted to achieve from it.</i>
Our setting is in West Berkshire, tucked away in the countryside, where we are proudly set in 60 acres of land that contains our own farm and woodland area that is the setting to our Forest school experiences. We are passionate advocates of the outdoors and we utilise it as a natural resource all year round, regardless of the weather. Our curriculum is adapted to ensure the children learn through doing, and in doing so they become independent and school ready by the time they leave us. We were aware that the outdoor environments provided us with so many opportunities, however we wanted to develop this further which is why we joined the Maths Champions programme. Our staff team is well trained and extremely knowledgeable on how to give the children the best early years experience they can, but many of them avoided maths as a topic due to the anxiety surrounding it. Some of the concepts that we have covered in the course were already being achieved by our team, but it was common that the mathematical interactions were basic and minimal. We wanted to expand our own knowledge and gain confidence surrounding this subject, in order to challenge ourselves and gain valuable terminology to utilise in our practice. As a staff team we needed to be pushed out of our comfort zones of counting and basic comparisons, and introduce deeper comparative language, open ended questions to encourage sustained shared thinking, pushing the children to problem solve and to introduce different concepts of mathematics.
How did you decide what to do? <i>What did the audits highlight, what changes did you consider and how did you identify the change/s to be made? Did the changes you considered come from the online training or resources etc?</i>
The Maths Champion and the Deputy completed the three online training courses to gain a clear understanding of the purpose of the programme and to gain knowledge ourselves to ensure we could provide the rest of the team with clear training and ongoing support. We found the online course useful to gain an insight to why maths is generally avoided in early years and understand how easy it is to implement in small areas of our daily routines. We made extensive notes on all of the important facts and information that we believed we would need and had a discussion amongst ourselves to identify what we have been missing in our setting and how we can implement it in the smoothest way. Through the completion of the audits we were able to highlight the areas for improvement in the staff confidence and in our individual environments. We were able to grasp an idea of the honest level of understanding from the staff, so we knew how we could benefit them. The self confidence audits were extremely beneficial as we could gauge an idea on who felt confident, as well as who was going to push to extend the learning in their room. We found that the baby unit felt less confident than the staff from the older room as they felt their opportunities were limited and trickier to embed than with older children. We recognised their reasoning and continued to support them throughout the course by giving them age appropriate training and reassuring them that the learning opportunities were endless. The learning environment audits enabled us to recognise gaps in our resources and to see where resources were not being used to their full potential. We ensured that each room was fairly reviewed, checking for resources to support each concept of maths. Once we were able to discover which areas our setting was lacking in as a whole, we created some additional audits to complete alongside the staff to achieve a rich environment.

IMPLEMENTATION

What did you change or implement?

Outline a positive change, or changes, that have taken place as a result of being part of the Maths Champions programme. How did you plan for it and what did you do? How did you plan to assess the benefit of the change on staff practice and children's experiences?

Once we had an understanding of the starting point of knowledge from the staff and recognised what we were lacking in the rooms we decided to create a plan on slowly improving both of these things.

We completed a book audit from each room, where we asked them to provide us with books they own that cover any of the 5 concepts of maths, which we used to place a book order and stock up useful books to support maths. We also asked the team to give us a list of any resources they believed they required since completing the audits, and we had discussions on how we need to utilise natural resources to our advantage also.

Our setting is split into 5 rooms, so we decided to get each team to dedicate an individual to be the maths champion from their room. We completed the programme online and filtered the information to them through short training sessions categorised into areas of learning, including the 5 concepts, loose parts and maths outdoors. We had opportunities to express our views and feelings towards implementing this into our daily routines and had regular check ups to review them too. Once the training was complete and the individuals had passed on the information to the rest of the teams we looked at how we could get each member of the team to not just understand the concepts but also be confident in implementing them too.

During a staff meeting we handed out folders that we had labelled the 'go to' folder. They will be widely used for beneficial information storage across our learning goals, but there was an entire section dedicated to maths champions. The 5 concepts of maths were categorised into sections with explanations of the meaning of the concept, the importance of the concept to the children's development and also lots of activity ideas to deepen the level of learning. These folders were adapted to match the age groups of the children with general routine ideas that could be utilised as a rich environment for some maths development including, water play, snack time and care routines. The staff team have been using these folders as support to flick through for powerful ideas, as well as referring to posters that have been put up in each room for daily reminders.

The Maths Champion and Deputy agreed to measure the understanding and development through regular observations of the staff teams. Some of these observations were planned, where the staff member was asked to do an activity that supports subitising for example, but once we were clear they understood the meaning of the concepts we started observing spontaneously. This allowed us to recognise which rooms were naturally including maths in their daily routine, and who was still missing opportunities for learning. Alongside this we completed the children observation assessment at the beginning of the programme, to return at the end to ensure the children were receiving clear benefits of the trained staff members.

IMPACT

The success and benefit of what you did:

For children

What has been the impact of the changes on children's learning and development? How has being involved in the programme made a difference for children in your nursery?

This programme caused us to make some changes to our setting, adapting the environment to match the development level of that specific room. With change, children become naturally curious which has been beneficial for us in getting them engaged in a variety of group times, tuff spots and loose parts play that has developed their mathematical knowledge. With the younger children at our setting we have seen an improvement in their attempts to one touch count, counting in a sequence and combining actions at singing group times. This has shown a development as they are beginning to subitise and be exposed to counting in the correct sequence. Their adapted room has provided them with opportunities to explore quantities, pattern, measure and capacity in a free and confident way.

In the older children we have seen a bigger change in their mathematical knowledge, including the use of correct terminology and methods. As a setting we adapt our activities to match the children's needs and interests and with the rich environment they have been provided with more challenges for problem solving and understanding spatial awareness. The counting has become more clear and the biggest difference is the realisation that the last number is displaying the quantity, showing knowledge of cardinality. The confidence levels of the children have massively improved and they are approaching our loose parts area more often, utilising the toys the way they were intended due to their gained knowledge.

For families

What has been the impact of the changes on families? How has being involved in the programme made a difference for families whose children attend your nursery?

With the gained knowledge we have received from the Maths Champion programme we have been able to support the families in encouraging the continuous maths at home too. We have introduced experience bags in our preschool room that cover different areas of development and transitions that they need additional support in. As well as this we have been writing posts to send to the parents to explain how easy maths can be introduced in our daily routines.

We have had feedback from the parents during handovers and parents evening, explaining how they have noticed a change in their mathematical terminology and confidence in mathematical interactions. All of this combined we have provided confidence for the parents to extend the opportunities for the children at home, and knowing how to support the learning further.

For staff

How has being involved in the programme made a difference to your staff team/individual practitioners? What has been the impact on their practice?

Since reflecting on the audits it is clear that the practitioners in our setting have become more confident in implementing maths in their environment, as well as utilising this knowledge to fill their environment with appropriate resources. Each room has been provided with new loose parts and other resources, as well as the teams collecting natural resources to meet the standards too. The rooms all have a rich environment as a result of the staff's developing knowledge, with opportunities for the children to explore different concepts and methods.

Upon observation we have seen a change in the language and terminology the staff members are using, showing they are more confident in extending challenges, problem solving and encouraging exploration. The children have been directly benefited due to the staff dedication and understanding of the training. They worked really hard to stay up to date with the training and worked as a team to see how it was most impactful in their specific rooms.

For the Maths Champion and Deputy Maths Champion

How has the programme helped you as Maths Champion and Deputy Maths Champion to develop your own practice? What has been the impact on your practice?

The Maths Champion and Deputy have gained lots of knowledge on the development of mathematics in early years, gaining an understanding on why it had been avoided for so long. With that knowledge we have been able to adapt the training for staff to counteract the standards that were pre-existing.

We have been supported by the programme to provide appropriate training to the other staff members, so we have become more confident in being in a leader role and supporting the staff from each room. As well as this we have found lots of additional training to expand the knowledge on the concepts and looking at ways to adapt this to meet the needs of each room.

For the setting

What has been the impact on your environment?

Our setting is filled with wonderful learning opportunities, especially in the outdoors due to our amount of land. We have seen a change in our attitudes towards nature and understanding of the benefit it may have. We have a beautiful environment that is rich with opportunity, through gardening club we have lots of full allotments. In the cooking club we have utilised these skills and are able to independently bake a cake by preschool. We are confident and love to share ideas, we give each other praise for wonderful ideas and have been working in unison due to challenges we have been facing. Our outdoor gardens were highlighted as a weakness when looking at our learning environment audit, so we have filled this space with resources such as buckets, bean bags, foam dice, weighing scales and lots of visual guides too.

Next steps

What further improvements might you make and how will you continue to monitor the quality of maths opportunities within the setting?

We have decided as maths champion and deputy that we are going to continue with our observations in each room, to ensure that the standard does not slip. We have recognised that the team have been putting in a tremendous effort so we want to encourage this to continue as a general part of our practise. As well as this we will continue with the posts for staff and parents to support them further in their time with the children. We will continue to fill our environment with rich resources as we continue and we will utilise it until it becomes a second nature to us.